Detection of ANT(2'')-Ia , AAC(6')-Ib Genes in Pseudomonas Aeruginosa Isolated From Urinary Tract Infections of Patients Admitted in High Risk Wards Hospitals Tabriz

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Background & Objectives: Urinary tract infections (UTIs) are one of the most common afflictions affecting humans throughout their life span and gram negative organisms are the commonest etiological agents. UTI caused by *Pseudomonas aeruginosa* requires much attention as its treatment is a therapeutic challenge as a result of the pathogen's intrinsic resistance to a wide range of antimicrobial agents. Aminoglycosides, though drug of choice for such UTI , however, many strains have been reported resistant . The inactivation of drugs by modifying enzymes is the most common mechanism of aminoglycoside resistance. This study aimed at to assess antibiotic resistance among P.aeruginosa isolated from UTIs of patients admitted to University teaching hospitals, Tabriz and to evaluate the mechanisms of aminoglycoside resistance among them.

Methods: During a 10 month period(April 2011-December2011), 65 non-repetitive strains of *P. aeruginosa* were collected from urine of patients with urinary tract infections admitted to ICU (52.5%) and burn wards (47.5%). All clinical samples were initially identified with phenotypic methods and aminoglycoside resisstance was estimated using the disk diffusion methods for all isolates. Chromosomal DNA of the isolates wasextracted using commercial DNA extraction kit and aminoglycoside resistance was analyzed by PCR amplification employing specified primers.

Results: Of 65 *P.aeruginosa* isolates , 56.4% were found to be resistant to amikacin and 63.7% to gentamicin, Ant (2″)-Ia gene was detected in 49.48% and the aac(3)-I was in (43.65%) of isolates.

Conclusion: This first analysis of resistance mechanisms showed unusual distribution of aminoglycoside modifying enzymes which reveals not only concern but also suggest a considerable avoidance of arbitrary use of antibiotics.

Keywords: *Pseudomonas aruginosa*; Aminoglycoside; Multi Drug Resistance